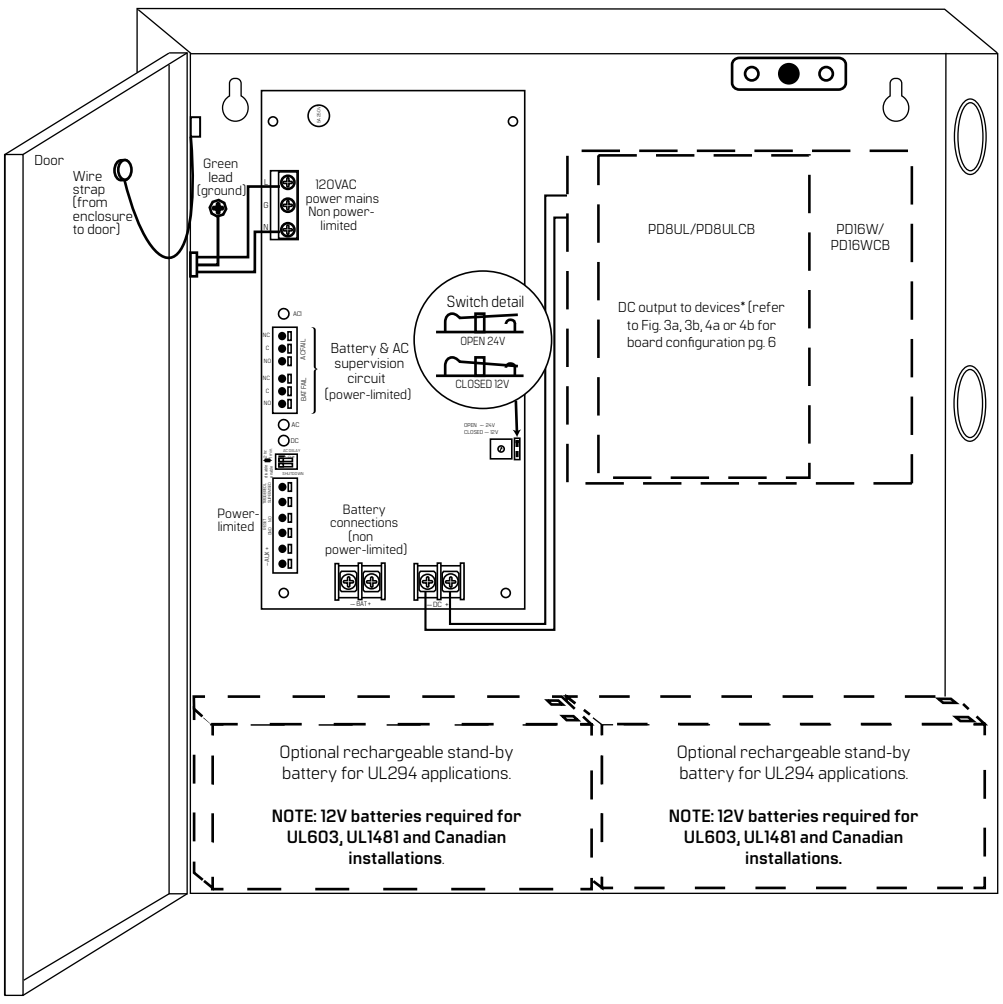
BEST
dormakaba Group

PS161-6 Power Supply

Installation Instructions

PS161-6



T93667_C - 04/2026

Original document

EN

Table of contents

1	**Important safety information**	**3**
1.1	Safety warnings	3
2	**Regulatory approvals and listings**	**3**
2.1	Approvals and listings	3
3	**Product overview**	**3**
3.1	PS161-6	3
4	**Technical specifications**	**4**
4.1	Power supply input	4
4.2	Power supply output	4
4.3	Battery backup	4
4.4	Enclosure dimensions	4
4.5	Visual indicators	4
4.6	Fire alarm disconnect	4
4.7	Supervision	4
4.8	Additional features	4
4.9	LED diagnostics	5
4.10	Wiring	5
4.11	Maintenance	5
4.12	Terminal identification power supply/charger	6
5	**Installation instructions**	**6**
5.1	Mounting unit	6
5.2	Configuring power supply input and output	6
5.3	Measuring voltage	7
5.4	Connecting DE exit device	7
5.5	Batteries for access control applications	7
5.6	Connecting batteries to terminals	7
5.7	Triggering power supply from FACP	7
5.8	Delaying AC reporting	7
5.9	Enabling/disabling low output power shutdown	7
5.10	Access control applications	8
5.11	Miscellaneous	8
6	**Trouble/time limited warning standby batteries**	**8**
6.1	Battery trouble indication	8
7	**NEC power-limited wiring requirements**	**9**
7.1	Wiring requirements	9
8	**Enclosure diagram – PS161-6**	**10**
8.1	PS161-6	10
9	**Enclosure dimensions**	**11**
9.1	Power supply enclosure template	11
10	**Appendix A-UL Listed compatible devices**	**12**
10.1	Four wire smoke detectors compatible with PS161-6 output	12
10.2	Two relays compatible with PS161-6 output	12

1 Important safety information

1.1 Safety warnings

1.1.1 Safety instructions: To reduce risk of injury or damage, carefully read and follow safety warnings, cautions and notices provided.

1.1.2 Safety warnings: Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ WARNING

1.1.3 Safety cautions: Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

⚠ CAUTION

1.1.4 Notice: Indicates information considered important but not directly hazard-related.

NOTICE

2 Regulatory approvals and listings

2.1 Approvals and listings

UL Listings — United States Installations

LISTED

UL 294 — Listed for access control system units
UL 603 — Listed for power supplies for use with burglar alarm systems
UL 1481 — Listed for power supplies for fire protective signaling systems

UL Listings — Canadian Installations

LISTED

ULC-S318-96 — Power supplies for burglar alarm systems; also suitable for access control

Regulatory Compliance

California State Fire Marshal (CSFM)

European Conformity

3 Product overview

3.1 PS161-6

- PS161-6 converts a 120 VAC / 60 Hz input to a 12 VDC or 24 VDC nominal output.
- PS161-6 includes a power-limited power distribution module with 8 outputs.
- Class 1 wiring methods and separation of circuits must be considered when connecting DC power supply to delayed egress hardware.

4 Technical specifications

4.1 Power supply input

Table 1

Features
• Voltage: 120 V AC, 60 Hz • Current: 3.5A AC • Input fuse ratings: 5 A/250 V • Battery fuse ratings: 7.5 A/32 V

4.2 Power supply output

Table 2

Features
• Voltage: 20.0-26.4 V • Total output: 6 A • Power limit/output: 2 A/per channel • Outputs: 8 (For delayed egress applications: use only 4) • Ripple voltage: 910 mV (Filtered and regulated outputs) • Protection: Thermal and short circuit protection with auto reset overload protection

4.3 Battery backup

Table 3

Features
• Built-in charger for sealed lead acid or gel type batteries • Maximum charge current 1.54 A • Automatic switch over to standby is instantaneous with no interruption • Enclosure Dimensions: 13" x 12.5" x 3.25" [330.2 x 318.0 x 82.55]

4.4 Enclosure dimensions

Table 4

	H x W x D approx.
PS161-6	13" x 12.5" x 3.25" [330.2 x 318.0 x 82.55]

4.5 Visual indicators

Table 5

Features
• Green AC Power LED indicates 120 VAC present.

4.6 Fire alarm disconnect

Table 6

Features
• Supervised fire alarm disconnect (latching or non-latching) 10K EOL resistor. Operates on a normally open (NO) or normally closed (NC) trigger.

4.7 Supervision

Table 7

Features
• AC fail supervision (form "C" contacts).

4.8 Additional features

Table 8

Features
• Short circuit and overload protection. • Unit is complete with power supply, enclosure, battery leads and cam lock.

4.9 LED diagnostics

Table 9

Power supply/charger		
Red (DC)	**Green (AC/AC 1)**	**Power supply status**
On	On	Normal operating condition
On	Off	Loss of AC, Standby battery supplying power
Off	On	No DC output
Off	Off	Loss of AC. Discharged or not standby battery. No DC output.

Table 10

Power distribution module	
Green (AC)	**Power distribution model status**
On	Normal operating condition
Off	No power output

4.10 Wiring

Table 11

Features
• Use 18 AWG or larger for all low voltage power connections. • Take care to keep power-limited circuits separate from non power-limited wiring (120 VAC, battery).

4.11 Maintenance

Table 12

Maintenance	
Unit should be tested at least once a year for proper operation as follows:	
Output voltage test	Under normal load conditions, DC output voltage should be checked for proper voltage level PS161-6: 24 VDC nominal rated @ 6 A max.
Battery test	Under normal load conditions check that battery is fully charged, check specified voltage (24 VDC @ 26.4) both at battery terminal and at board terminals marked (-- BAT +) to ensure there is no break in battery connection wires.
NOTE	Maximum charging current under discharge is 1.54 A.
NOTE	Expected battery life is 5 years; however, it's recommended changing batteries in 4 years or less if needed.

4.1.2 Terminal identification power supply/charger

Table 13

Power supply/charger	
Terminal legend	**Function/description**
L, N	Connect 120 VAC 60 Hz to these terminals: L to hot, N to neutral (non power-limited) (Fig. 2 - 1a).
– DC +	12 VDC or 24 VDC nominal @ 6 A continuous output (non power-limited output) (Fig. 2 - 1h).
Trigger EOL supervised	Fire Alarm Interface trigger input from a short or FACP. Trigger inputs can be normally open, normally closed from an FACP output circuit (power-limited input) (Fig. 2 - 1d).
NO, GND reset	FACP interface latching or non-latching (power-limited) (Fig. 2 - 1e).
+ AUX –	Auxiliary power-limited output rated @ 1 A (unswitched) (power-limited output) (Fig. 2 - 1f).
AC fail NC, C, NO	Indicates loss of AC power, e.g. connect to audible device or alarm panel. Relay normally energized when AC power is present. Contact rating 1A @ 30 VDC (power-limited) (Fig. 2b).
Bat fail NC, C, NO	Indicates low battery condition, e.g. connect to alarm panel. Relay normally energized when DC power is present. Contact rating 1 A @ 30 VDC. A removed battery is reported within 5 minutes. Battery reconnection is reported within 1 minute (power-limited) (Fig. 2 - 1b).
– BAT +	Standby battery connections. Maximum charge current 1.54 A (non power-limited) (Fig. 2 - 1g).

Table 14

Power distribution module	
Terminal legend	**Function/description**
1P to 8P	Positive DC power outputs
1N to 8N	Negative DC power outputs

5 Installation instructions

Fig. 1, Fig. 2

Wiring methods shall be in accordance with the National Electrical Code/NFPA 70/NFPA 72/ANSI, the Canadian Electrical Code, Part 1 and with all local codes and authorities having jurisdiction. The product must be located indoors within the protected premises. Mount unit in desired location within protected premises.

5.1 Mounting unit

5.1.1 Mark and predrill holes in wall to line up with top two keyholes in enclosure.

5.1.2 Install two upper fasteners and screws in wall with screw heads protruding.

5.1.3 Place enclosure's upper keyholes over two upper screws, level and secure.

5.1.4 Mark position of lower two holes.

5.1.5 Remove enclosure.

5.1.6 Drill lower holes and install two fasteners.

5.1.7 Place enclosure's upper keyholes over two upper screws.

5.1.8 Install two lower screws and make sure to tighten all screws. See "Enclosure dimensions", pg. 11).

5.1.9 Secure cabinet to earth ground.

5.2 Configuring power supply input and output

5.2.1 Set DC output voltage to 24 DC by setting SW1 to open position on power supply board (Fig. 2-1a).

5.2.2 Connect unswitched AC power (120 VAC 60 Hz) to terminals marked (L, N) (Fig. 2).

5.2.3 Use 18 AWG for all power connections and 18 AWG to 22 AWG for power limited circuits (AC Fail/Low Battery reporting).

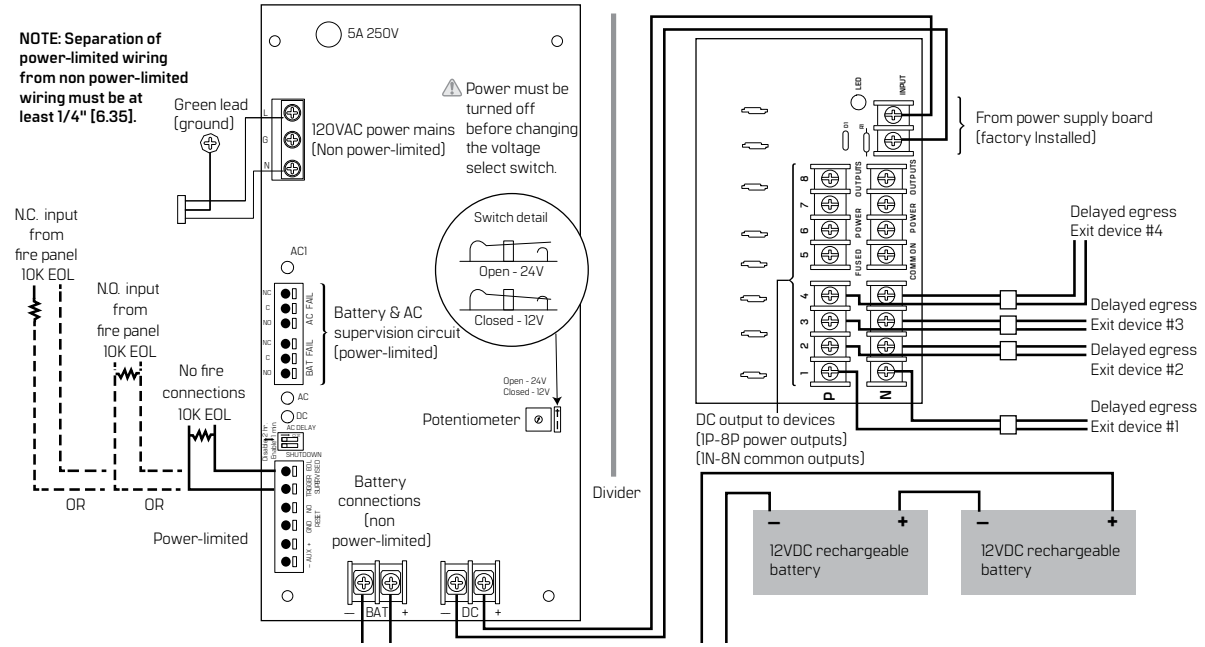
NOTE: Keep power-limited wiring separate from non power-limited wiring (120 VAC 60 Hz input, battery wires). Minimum 0.25" [6.35] spacing must be provided.

5.2.4 Secure green wire lead to earth ground.

5.3 Measuring voltage

5.3.1 Measure output voltage before connecting devices. This helps avoid potential damage.

Figure 1 Wiring diagram for connecting DE exit devices to a PS161-6 power supply



NOTE: A 10k EOL (End of Line) resistor must be installed across terminals marked (trigger EOL supervised) on PS161-6 board or unit will remain in fire alarm condition.

5.4 Connecting DE exit device

5.4.1 Connect delayed egress exit device locking hardware positive leads to terminals marked 1 through 4 POS (+) on PD8ULCB board and negative leads to NEG 1 terminals through 4 terminals.

5.5 Batteries for access control apps

NOTE: A 10k EOL (End of Line) resistor must be installed across terminals marked (trigger EOL supervised) on PS161-6 board or unit will remain in fire alarm condition.

NOTE: For access control applications batteries are optional. When batteries are not used, a loss of AC will result in loss of output voltage.

NOTE: Batteries must be lead acid or gel type if used.

5.5.1 Use two 12 VDC batteries connected in series for 24 VDC operation (battery leads included).

5.6 Connecting batteries to terminals

5.6.1 Connect battery to terminals marked [-- BAT +] (Fig. 2 - 1g).

5.6.2 Use two 12 VDC batteries connected in series for 24 VDC operation. (battery leads included).

5.6.3 Use batteries - Casil CL1270 (12V/7AH), CL12120 (12V/12 AH), CL12400 (12V/40 AH), CL12650 (12V/65 AH) batteries or UL recognized BAZR2 batteries of an appropriate rating.

5.7 Triggering power supply from FACP

5.7.1 To trigger power supply from a fire alarm control panel (FACP), connect signaling circuit of FACP to terminals marked trigger end of line supervised.

5.8 Delaying AC reporting

5.8.1 To delay AC reporting for 2 hrs. set dip switch [AC Delay] to Off position (Fig. 2 - 1c).

5.8.2 To delay AC reporting for 1 min. set dip switch [AC Delay] to On position (Fig. 2 - 1c).

NOTE: Must be set to On position for burglar alarm applications.

5.9 Enabling/disabling low output power shutdown

5.9.1 To enable low output power shutdown set dip switch [shutdown] to On position (Fig. 2 - 1c).

5.9.2 To disable low output power shutdown set dip switch [shutdown] to Off position (Fig. 2 - 1c).

5.10 Access control applications

5.10.1 Mount UL Listed tamper switch (Sentrol model 3012 or equivalent) at top of enclosure.

5.10.2 Slide tamper switch bracket onto edge or enclosure approx. 2" [50.8] from right side (Fig. 4 or Fig. 7).

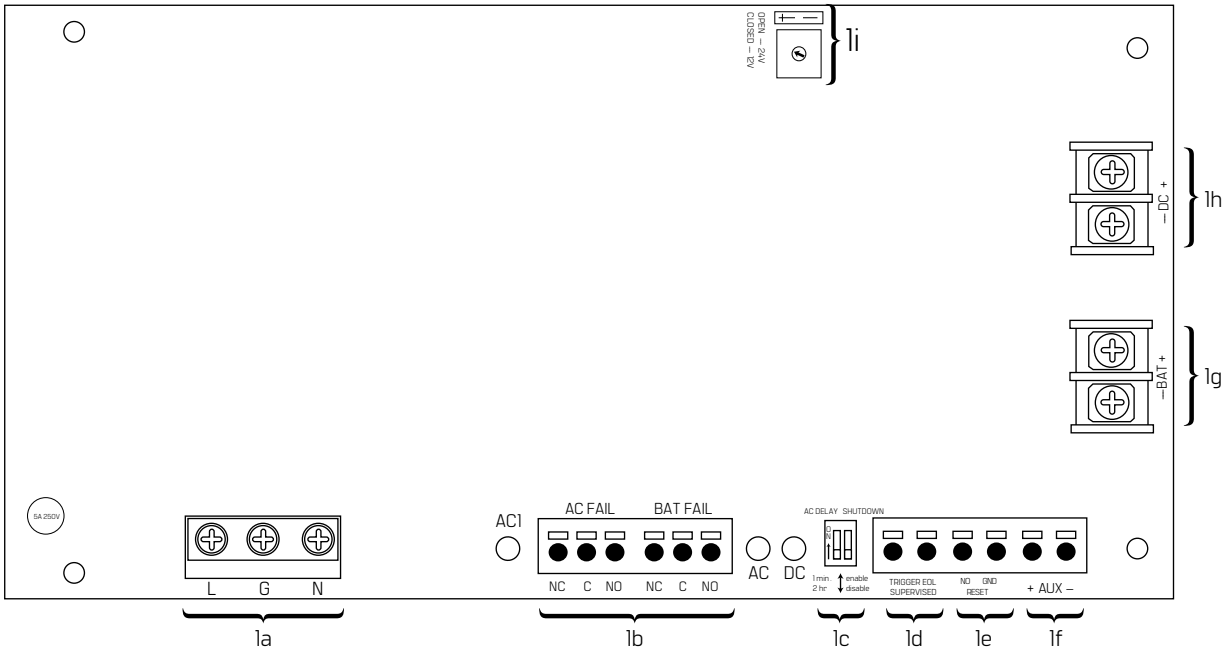
5.10.3 Connect tamper switch wiring to the access control panel input or appropriate UL Listed reporting device.

5.11 Miscellaneous

5.11.1 Trigger terminals are end-of-line resistor supervised (10k ohms). Opening or shorting trigger terminals will cause (DC) output to shutdown (Fig. 2 - 1d).

5.11.2 Place a jumper for non-latching FACP. A momentary short on these terminals resets FACP latching (trigger EOL shutdown) (Fig. 2 - 1e).

Figure 2 PS161-6 Board configuration



6 Trouble/time limited warning standby batteries

6.1 Battery trouble indication

Fig. 3, Fig. 4

Trouble/time limited warning of standby batteries

For compliance with ULC S318-96, the time limited warning circuit must be connected for local or remote annunciation with an amber or red LED to indicate DC trouble (low battery, loss of battery or when 95% of the standby battery has been depleted). Connect the circuit to the bat fail relay contacts to an appropriate input of a UL Listed burglar alarm or access control panel. The following figure shows the circuitry needed for local annunciation.

For Canadian use, a red indicating lamp must be visible from the exterior of this enclosure. Wire one leg of a UL Listed, power-limited power source to the indicating lamp. Wire the second leg of the power source to the indicating lamp in series with the battery fail relay contact terminals marked [BAT FAIL - C, NO].

Figure 3 Battery trouble indication

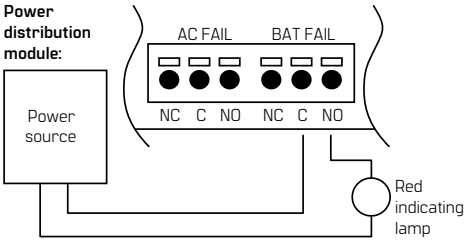
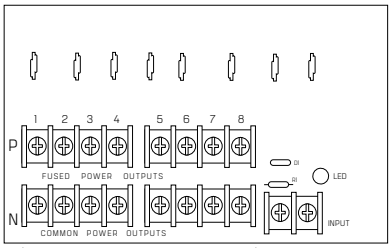


Figure 4 PD8ULCB - power distribution board power-limited outputs



T93667_C

7 NEC power-limited wiring requirements

7.1 Wiring requirements

Fig. 5, Fig. 6

Power-limited and non power-limited circuit wiring must remain separated in the cabinet. All power-limited circuit wiring must remain at least 0.25" [6.35] away from any non power-limited circuit wiring. Furthermore, all power-limited circuit wiring and non power-limited circuit wiring must enter and exit the cabinet through different conduits as shown in Fig. 5. Your specific application may require different conduit knockouts to be used. Any conduit knockouts may be used. For power- limited applications, use of conduit is optional. All field wiring connections must be made employing suitable gauge CM or FPL jacketed wire (or equivalent substitute). Optional UL Listed battery enclosure must be mounted adjacent to the power supply via Class 1 wiring methods. For Canadian installations use shielded wiring for all connections.

NOTE: See "Wire handling drawing" below for the proper way to install the CM or FPL jacketed wire, as shown in Fig. 5 and Fig. 6.

Figure 5 Wire handling drawing

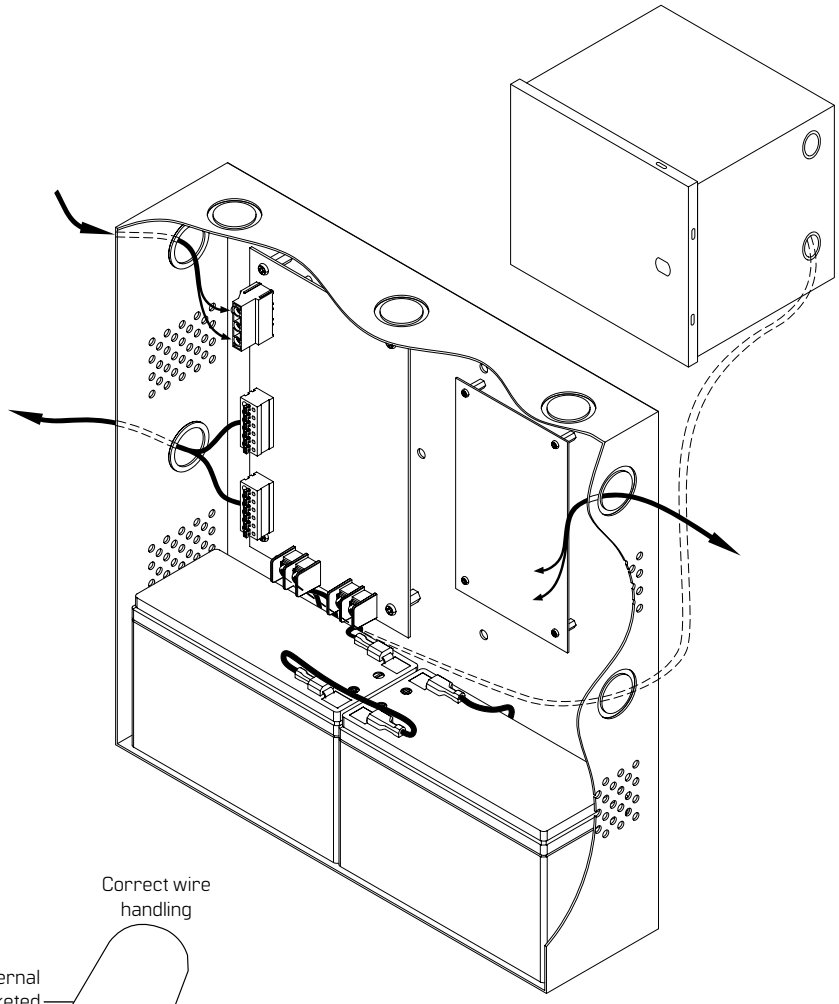
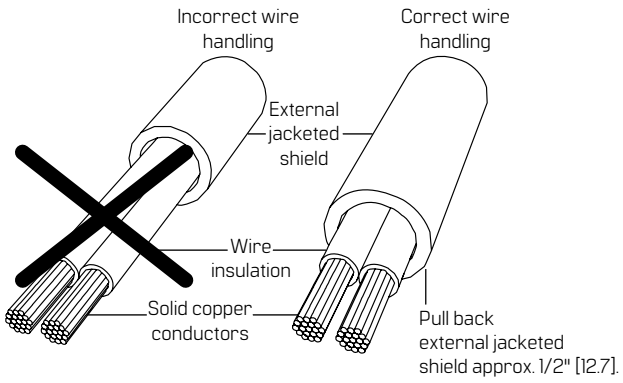


Figure 6 Jacketed wire

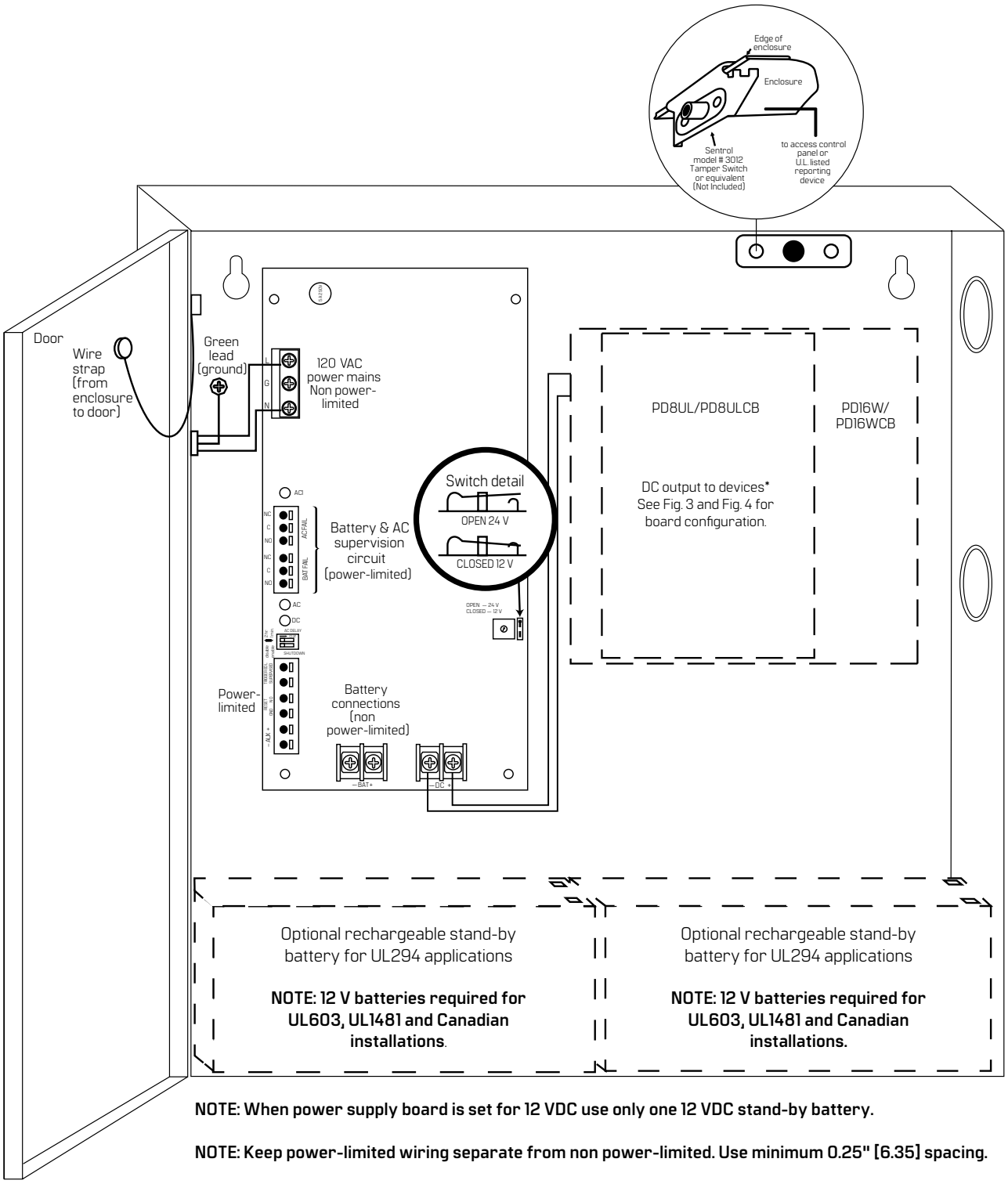


8 Enclosure diagram — PS161-6

8.1 PS161-6

Fig. 7

Figure 7 Enclosure diagram



NOTE: When power supply board is set for 12 VDC use only one 12 VDC stand-by battery.

NOTE: Keep power-limited wiring separate from non power-limited. Use minimum 0.25" [6.35] spacing.

NOTE: 7AH rechargeable batteries are largest batteries that can fit in this enclosure.

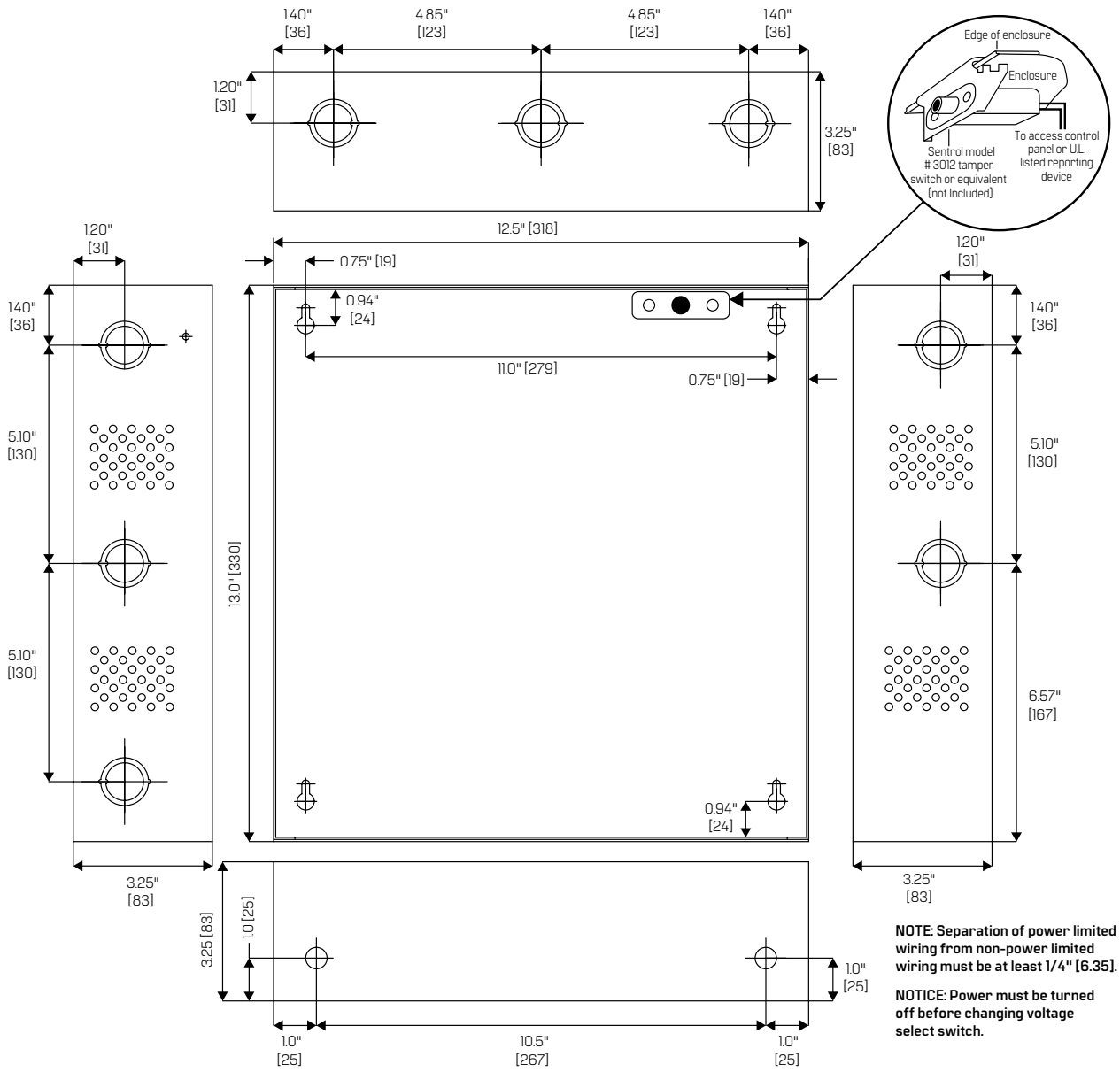
9 Enclosure dimensions

9.1 Power supply enclosure template

Fig. 8

H x W x D: 13" x 12.5" x 3.25" [330.2 x 318.0 x 82.55]

Figure 8 Power supply enclosure template



NOTE: Separation of power limited wiring from non-power limited wiring must be at least 1/4" [6.35].

NOTICE: Power must be turned off before changing voltage select switch.

10 Appendix A-UL Listed compatible devices

10.1 Four wire smoke detectors compatible with PS161-6 output

Table 15

System sensor smoke detector/ base	Detector type	Max standby current (mA)	Alarm current (mA)
B112LP	Base	0.12	36
DH100ACDC	Photoelectric	0.15	0.70
DH100ACDCLP	Photoelectric	0.15	0.70
DH100ACDCLPW	Photoelectric	0.15	0.70
DH400ACDCI	Ionization duct	25	95
DH400ACDCP	Photoelectric duct	25	95
1112/24/D	Ionization	0.05	50
1424	Ionization	0.10	41
1451 (w/B402B base)	Ionization	0.10	39
2112/24ATR	Photoelectric	0.50	60/70
2112/24AITR	Photoelectric	0.50	60/70
2112/24/D	Photoelectric	0.05	50
2112/24T/D	Photoelectric w/135o thermal	0.05	50
2112/24TSRB	Photoelectric w/135o thermal supervisory relay	15	45
2312/24TB	Photoelectric	0.12	50
2412 (12 volt)	Photoelectric	0.12	77
2424	Photoelectric	0.10	41
2451	Photoelectric	0.10	39
2451TH (with/B402B base)	Photoelectric	0.10	39
2W-MOD	Loop test/maintenance mod.	30	50
4W-B (12/24 volt)	Photoelectric I3	.05	23
4WT-B (12/24 volt)	Photoelectric I3 w/therm	.05	23
4WTA-B (12/24 volt)	I3 Photo w/therm/sounder	.05	35
4WTR-B (12/24 volt)	I3 Photo w/therm/relay	.05	35
4WITAR-B (12/24 volt)	I3 Photo w/isolated therm/ sounder/relay	.05	50
6424	Projected beam	10	28.4
Beam 1224(S)	Projected beam	17	38.5

10.2 Two relays compatible with PS161-6 output

Table 16

Manufacturer	Model	Current (mA)	Manufacturer
System sensor	EOLR-1	30	System sensor

Document translations available.
Scan for product details and downloads.
Call 1-800-392-5209 or visit
https://dhwsupport.dormakaba.com/hc/en-us
for assistance and warranty information.

⚠ **WARNING! This Manufacturer advises that no lock can provide complete security by itself. This lock may be defeated by forcible or technical means, or evaded by entry elsewhere on the property. No lock can substitute for caution, awareness of your environment, and common sense. Builder's hardware is available in multiple performance grades to suit the application. In order to enhance security and reduce risk, you should consult a qualified locksmith or other security professional.**